Amendments To the Claims:

Please amend the claims as shown.

1-10 (canceled)

11. (new) An optical transmission system, comprising:

a first optical fiber having a first length, a first dispersion compensation unit, and a first optical signal;

a second optical fiber having a second length, a second dispersion compensation unit, and a second optical signal;

a first data transmission rate at which the first optical signal is transmitted;

a second data transmission rate at which the second optical signal is transmitted; and

a pre-compensation unit arranged upstream of the first length of optical fiber for pre-compensating the second optical signal in order to transmit the second optical signal at the second data transmission rate and the pre-compensation unit having a pre-compensating amount of between 0 ps/nm and -2000 ps/nma, wherein

the first dispersion compensation unit compensates the first optical signal as the first optical signal is sent to the second dispersion compensation unit and is dimensioned in such a way that the first optical fiber length to the second optical fiber length are respectively under-compensated by approximately the same under-compensation amount.

12. (new) The optical transmission system according to Claim 11, wherein the system is comprised of more than two optical fibers.

13. (new) The optical transmission system according to Claim 11, wherein the second data transmission rate is at least double the first data transmission rate.

14. (new) The optical transmission system according to Claim 11, wherein the pre-compensation amount is dependent on the size of the launch power of the second optical signal having a second data transmission rate, and on the type of fiber used for transmission.

15. (new) The optical transmission system according to Claims11, wherein the first and second optical fibers are a standard single mode fiber or a non-zero dispersion-shifted fiber.

16. (new) The optical transmission system according to Claims12, wherein the optical fibers are a standard single mode fiber or a non-zero dispersion-shifted fiber.

17. (new) The optical transmission system according to Claim 15, wherein the pre-compensation amount for a standard single mode fiber is approximated by the following relation:

$$D_{PC} = (-11+1.665 \bullet P_{launch}/\,[\mathrm{dBm}]\,) \bullet D_{inline} - 270 \;\; [\mathrm{ps/nm}]$$

where

P_{launch} is the launch power of the optical signals having the second data transmission rate, per length of optical fiber, and

D_{inline} is the average under-compensation amount of the first to second dispersion compensation unit.

18. (new) The optical transmission system according to Claim 15, wherein the pre-compensation amount for a non-zero dispersion-shifted fiber is approximated by the following equation:

$$D_{PC} = (-12.5+1.2 \bullet P_{launch}/\,[\mathrm{dBm}]\,) \bullet D_{inline} - 25 \;\; [\mathrm{ps/nm}]$$

where

P_{launch} is the launch power of the optical signals having the second data transmission rate, per length of optical fiber, and

D_{inline} is the average under-compensation amount of the first to second dispersion compensation unit.

19. (new) The optical transmission system according to Claim 15, wherein the under-compensation amount during the transmission of optical signals via a standard single mode fiber is in the range 10 to 80 ps/nm and transmission of optical signals via a non-zero dispersion-shifted fiber is in the range 5 to 60 ps/nm.

20. (new) The optical transmission system according to Claim 12, wherein the lengths of optical fiber in the optical transmission system are between 40 km and 120 km long.

21. (new) The optical transmission system according to one of the Claims 12, wherein an optical fiber and a length of optical fiber having a dispersion compensation unit form an optical transmission module, and an optical transmission system consists of a plurality of optical transmission modules arranged in series.

22. (new) The optical transmission system according to Claim 11, wherein the optical transmission system has a bi-directional operating mode.

Amendments To the Abstract:

In the English translation document, please add the section heading at page 23 line 1, as follows:

--Abstract--

Please add the paragraph in the English translation document at page 23 line 1, after the newly added Abstract, as follows:

The invention relates to an optical transmission system for transmitting optical signals consisting of N lengths of optical fibre, each comprising an optical fibre and a dispersion compensation unit. In order to transmit first optical signals having a first data transmission rate, the compensating amounts of the first to N-th dispersion compensation units are dimensioned in such a way that the first to N-th lengths of fibre are respectively under compensated by approximately the same undercompensating amount. In order to then transmit second optical signals having a second data transmission rate, a pre-compensation unit for pre-compensating the second optical signals is mounted upstream of the first length of fibre, said pre-compensation unit having a pre-compensating amount of between 0 ps/nm and -2000 ps/nm. In this way, optical signals having a higher bit rate, especially 40 Gbit/s-signals, can then be transmitted by means of an optical transmission system which is optimised in terms of dispersion for optical signals having a lower bit rate, especially 10 Gbit/s-signals.